

## ABSTRACT

Irrigation and drainage systems are disclosed, including a saturated  
5 zone and at least one pipe in communication with the saturated zone. The  
pipe(s) can be configured to comprise a tubarc porous microstructure for  
conducting water from the saturated zone to an unsaturated zone in order to  
drain the water from the saturated zone. The water can be delivered from the  
saturated zone to the unsaturated zone through the tubarc porous  
10 microstructure, thereby permitting the water to be harnessed for irrigation or  
drainage through the hydrodynamic movement of the water from one zone of  
saturation or unsaturation to another.

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